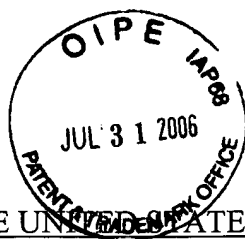


00250.000035



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	:	Examiner: Not Yet Assigned
IKUO MIMURA	)	
	:	Group Art Unit: Not Yet Assigned
Application No.: 10/581,490	)	
	:	
Filed: June 2, 2006	)	
	:	
For: TRIANGULAR-PYRAMIDAL	)	
CUBE-CORNER	)	
RETROREFLECTIVE ARTICLE	)	
HAVING CURVED REFLECTIVE	)	
LATERAL FACE	:	July 28, 2006

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SUBMISSION OF PCT FORM PCT/ISA/237 AND PCT/RO/101

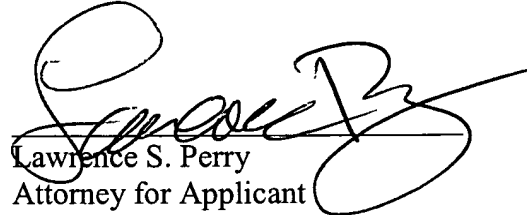
Sir:

Enclosed to complete the record and for the Examiner's convenience is a copy of the Written Opinion of the International Searching Authority (Form PCT/ISA/237) with translation in the above-identified application. Also enclosed is a copy of Applicant's PCT/RO/101 form.

Entry hereof is earnestly solicited.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



Lawrence S. Perry  
Attorney for Applicant  
Registration No. 31,865

FITZPATRICK, CELLA, HARPER & SCINTO  
30 Rockefeller Plaza  
New York, New York 10112-3801  
Facsimile: (212) 218-2200

LSP\ac

NY\_Main 583623\_1

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43 bis.1)

To:

ODAJIMA PATENT OFFICE  
Attn. Heikichi ODAJIMA  
Nippon Jitensha Bldg.,  
9-15, Akasaka 1-chome, Minato-ku,  
TOKYO 107-0052 JAPAN

Date of mailing  
(day/month/year)

March 22, 2005

Applicant's or agent's file reference

K-87Carbide

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/018329

International filing date (day/month/year)

December 2, 2004

Priority date (day/month/year)

December 2, 2003

International Patent Classification (IPC) or both national classification and IPC

Int. Cl<sup>7</sup>G02B5/122

Applicant

NIPPON CARBIDE KOGYO KABUSHIKI KAISHA

## 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/  
Japan Patent Office, 4-3, Kasumigaseki  
3-chome, Chiyoda-ku, Tokyo  
100-8915 Japan  
Facsimile No.

Date of completion of this opinion

March 3, 2005

Authorized officer

Yoshiko MORIGUCHI

Telephone No. 03-3581-1101 Ext. 3271

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/018329

Box No. 1      Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

- ☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper  
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed  
☐ filed together with the international application in electronic form  
☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/JP2004/018329**

**Box No. V Reasoned statement under Rule 43b i d(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	<u>1-15</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>1-6, 8,9,11</u>	YES
	Claims	<u>7,10,12-15</u>	NO
Industrial applicability (IA)	Claims	<u>1-15</u>	YES
	Claims	_____	NO

**2. Citations and explanations:**

Inventions of claims 7, 10, and 12 to 15 do not have inventive step over Documents 1 and 2 which are cited by the International Search Report.

Document 1 describes: in a retroreflective article formed of many triangular-pyramidal cube-corner retroreflective element groups formed by V-shaped groove groups, said cube-corner elements are provided with irregularly tilted regions beyond arrays (see, e.g., Fig. 7A). Therefore, it can be said that the base lines constituting V-shaped grooves include nonlinear base lines which do not form linear trajectories.

On the other hand, Document 2 describes: in a retroreflective article formed of many triangular-pyramidal cube-corner retroreflective element groups formed of V-shaped groove groups, reflective lateral faces formed of V-shaped groove group form multiple planes; the depth of at least one of the planes formed of base line groups of the V-shaped groove groups is different from the depths of other planes; and an x-directional V-shaped groove is formed at a position having an offset from the intersection between y- and z-directional V-shaped grooves and cube-corner retroreflective element pairs are asymmetric.

Therefore, a person skilled in the art can easily arrive at the inventions of claims 7, 10, and 12 to 15 by combining Document 1 with Document 2.

特許協力条約

発信人 日本国特許庁 (国際調査機関)



出願人代理人  小田島 平吉  あて名  〒 107-0052  東京都港区赤坂1丁目9番15号 日本自転車 会館 小田島特許事務所	様
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PCT  
国際調査機関の見解書  
(法施行規則第40条の2)  
[PCT規則43の2.1]

発送日  
(日.月.年)

22. 3. 2005

出願人又は代理人 の書類記号  K-87Carbide	今後の手続きについては、下記2を参照すること。		
国際出願番号 PCT/J P 2004/018329	国際出願日 (日.月.年) 02. 12. 2004	優先日 (日.月.年) 02. 12. 2003	
国際特許分類 (IPC) Int. Cl. G 02 B 5 / 122			
出願人 (氏名又は名称)  日本カーバイド工業株式会社			

1. この見解書は次の内容を含む。

- ☒ 第I欄 見解の基礎
- ☐ 第II欄 優先権
- ☐ 第III欄 新規性、進歩性又は産業上の利用可能性についての見解の不作成
- ☐ 第IV欄 発明の単一性の欠如
- ☒ 第V欄 PCT規則43の2.1(a)(i)に規定する新規性、進歩性又は産業上の利用可能性についての見解、それを裏付けるための文献及び説明
- ☐ 第VI欄 ある種の引用文献
- ☐ 第VII欄 国際出願の不備
- ☐ 第VIII欄 国際出願に対する意見

2. 今後の手続き  
国際予備審査の請求がされた場合は、出願人がこの国際調査機関とは異なる国際予備審査機関を選択し、かつ、その国際予備審査機関がPCT規則66.1の2(b)の規定に基づいて国際調査機関の見解書を国際予備審査機関の見解書とみなさない旨を国際事務局に通知していた場合を除いて、この見解書は国際予備審査機関の最初の見解書とみなされる。

この見解書が上記のように国際予備審査機関の見解書とみなされる場合、様式PCT/ISA/220を送付した日から3月又は優先日から22月のうちいずれか遅く満了する期限が経過するまでに、出願人は国際予備審査機関に、適当な場合は補正書とともに、答弁書を提出することができる。

さらなる選択肢は、様式PCT/ISA/220を参照すること。

3. さらなる詳細は、様式PCT/ISA/220の備考を参照すること。

見解書を作成した日  03. 03. 2005			
名称及びあて先 日本国特許庁 (ISA/J P) 郵便番号100-8915 東京都千代田区霞が関三丁目4番3号	特許庁審査官 (権限のある職員) 森口 良子	2 V	9 1 2 5
電話番号 03-3581-1101 内線 3271			

様式PCT/ISA/237 (表紙) (2004年1月)

## 第 I 欄 見解の基礎

1. この見解書は、下記に示す場合を除くほか、国際出願の言語を基礎として作成された。

- ☐ この見解書は、\_\_\_\_\_ 語による翻訳文を基礎として作成した。  
それは国際調査のために提出された PCT 規則 12.3 及び 23.1(b) にいう翻訳文の言語である。

2. この国際出願で開示されかつ請求の範囲に係る発明に不可欠なヌクレオチド又はアミノ酸配列に関して、以下に基づき見解書を作成した。

- a. タイプ ☐ 配列表  
☐ 配列表に関連するテーブル

- b. フォーマット ☐ 書面  
☐ コンピュータ読み取り可能な形式

- c. 提出時期 ☐ 出願時の国際出願に含まれる  
☐ この国際出願と共にコンピュータ読み取り可能な形式により提出された  
☐ 出願後に、調査のために、この国際調査機関に提出された

3. ☐ さらに、配列表又は配列表に関連するテーブルを提出した場合に、出願後に提出した配列若しくは追加して提出した配列が出願時に提出した配列と同一である旨、又は、出願時の開示を超える事項を含まない旨の陳述書の提出があった。

4. 補足意見：

第V欄 新規性、進歩性又は産業上の利用可能性についてのPCT規則43の2.1(a)(i)に定める見解、それを裏付ける文献及び説明

1. 見解

新規性 (N)	請求の範囲	1-15	有 無
	請求の範囲		
進歩性 (IS)	請求の範囲	1-6, 8, 9, 11	有 無
	請求の範囲	7, 10, 12-15	
産業上の利用可能性 (IA)	請求の範囲	1-15	有 無
	請求の範囲		

2. 文献及び説明

請求の範囲第7, 10, 12-15に係る発明は、国際調査報告で引用された文献1及び文献2より進歩性を有しない。

文献1には、V字状溝群によって形成される多数の三角錐形キューブコーナー再帰反射素子群により形成される再帰反射物品において、キューブコーナー素子はアレイを超えて不規則に傾斜される領域を具備していることが記載されている（図7A等参照）。したがってV字状溝を構成する底辺は、直線状の軌跡をなさない非直線底辺を有すると言えるものである。

一方文献2には、V字状溝群によって形成される多数の三角錐形キューブコーナー再帰反射素子群により形成される再帰反射物品において、V字状溝群により形成される反射側面が複平面を形成する点、かつV字状溝群の各底辺群が形成する平面の少なくとも一つの平面の深さが他の平面の深さと異なる点、またx方向のV字状溝がy方向とz方向のV字状溝の交点からオフセットを持った位置に形成されており、キューブコーナー再帰反射素子対が非対称の対である点、が記載されている。

したがって当業者であれば文献1と文献2とを組み合わせ、請求の範囲第7, 10, 12-15に係る発明を導くことは容易である。



# PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum)

K-87Carbide

**Box No. I TITLE OF INVENTION**  
TRIANGULAR-PYRAMIDAL CUBE-CORNER RETROREFLECTIVE  
ARTICLE HAVING CURVED REFLECTIVE LATERAL FACE

**Box No. II APPLICANT** ☐ This person is also inventor

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

NIPPON CARBIDE KOGYO KABUSHIKI KAISHA  
11-19, Kohnan 2-chome, Minato-ku,  
TOKYO 108-8466 JAPAN

Telephone No.

Facsimile No.

Teleprinter No.

Applicant's registration No. with the Office

State (that is, country) of nationality:

JAPAN

State (that is, country) of residence:

JAPAN

This person is applicant  
for the purposes of:

☐ all designated  
States

☒ all designated States except  
the United States of America

☐ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

**Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Ikuo MIMURA  
3700-5, Butsuden, Uozu-shi,  
TOYAMA 937-0061 JAPAN

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box is  
marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

JAPAN

State (that is, country) of residence:

JAPAN

This person is applicant  
for the purposes of:

☐ all designated  
States

☐ all designated States except  
the United States of America

☒ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

**Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common  
representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

(6078) Heikichi ODAJIMA, Patent Attorney  
(8024) Osamu YASUDA, Patent Attorney  
Odajima Patent Office, Nippon Jitensha Bldg.,  
9-15, Akasaka 1-chome, Minato-ku,  
TOKYO 107-0052 JAPAN

Telephone No.

03-3585-2256

Facsimile No.

81-3-3582-3521

Teleprinter No.

Agent's registration No. with the Office

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

**Box No. V DESIGNATIONS**

The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is not designated for any kind of national protection
- ☐ KR Republic of Korea is not designated for any kind of national protection
- ☐ RU Russian Federation is not designated for any kind of national protection

(The check-boxes above may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. See the Notes to Box No. V as to the consequences of such national law provisions in these and certain other States.)

**Box No. VI PRIORITY CLAIM**

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office
item (1) December 2, 2003	Patent Application No. 2003-402393	JAPAN		
item (2) January 14, 2004	Patent Application No. 2004-006445	JAPAN		
item (3)				

☐ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:

☐ all items    ☐ item (1)    ☐ item (2)    ☐ item (3)    ☐ other, see Supplemental Box

\* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)): . . . .

**Box No. VII INTERNATIONAL SEARCHING AUTHORITY**

**Choice of International Searching Authority (ISA)** (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / JP

**Request to use results of earlier search; reference to that search** (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day/month/year)                      Number                      Country (or regional Office)

**Box No. VIII DECLARATIONS**

The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

<input type="checkbox"/> Box No. VIII (i)	Declaration as to the identity of the inventor	:	Number of declarations
<input type="checkbox"/> Box No. VIII (ii)	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	:	
<input type="checkbox"/> Box No. VIII (iii)	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	:	
<input type="checkbox"/> Box No. VIII (iv)	Declaration of inventorship (only for the purposes of the designation of the United States of America)	:	
<input type="checkbox"/> Box No. VIII (v)	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	:	

**Box No. IX CHECK LIST; LANGUAGE OF FILING**

This international application contains:  
(a) **in paper form**, the following number of sheets:

request (including declaration sheets) : 3  
description (excluding sequence listing and/or tables related thereto) : 62  
claims : 4  
abstract : 1  
drawings : 14

Sub-total number of sheets : 84  
sequence listing : 0  
tables related thereto : 0

*(for both, actual number of sheets if filed in paper form, whether or not also filed in computer readable form; see (c) below)*

Total number of sheets : 84

(b) ☐ **only in computer readable form** (Section 801(a)(i))

(i) ☐ sequence listing  
(ii) ☐ tables related thereto

(c) ☐ **also in computer readable form** (Section 801(a)(ii))

(i) ☐ sequence listing  
(ii) ☐ tables related thereto

Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the

☐ sequence listing: .....  
☐ tables related thereto: .....  
*(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)*

This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):

- |   |     |
|---|-----|
| 1. <input checked="" type="checkbox"/> fee calculation sheet  | : 1 |
| <input checked="" type="checkbox"/> patent revenue stamps   | : 1 |
| <input type="checkbox"/> certificate of payment of fee  | :   |
| 2. <input type="checkbox"/> original separate power of attorney   | :   |
| 3. <input type="checkbox"/> original general power of attorney  | :   |
| 4. <input type="checkbox"/> copy of general power of attorney; reference number, if any: .....  | :   |
| 5. <input type="checkbox"/> statement explaining lack of signature  | :   |
| 6. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): .....   | :   |
| 7. <input type="checkbox"/> translation of international application into (language): .....   | :   |
| 8. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material  | :   |
| 9. <input type="checkbox"/> sequence listing in computer readable form (indicate type and number of carriers)   | :   |
| (i) <input type="checkbox"/> copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application) :   | :   |
| (ii) <input type="checkbox"/> (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter :              | :   |
| (iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the sequence listing mentioned in left column :   | :   |
| 10. <input type="checkbox"/> tables in computer readable form related to sequence listing (indicate type and number of carriers)  | :   |
| (i) <input type="checkbox"/> copy submitted for the purposes of international search under Section 802(b-quater) only (and not as part of the international application) :  | :   |
| (ii) <input type="checkbox"/> (only where check-box (b)(ii) or (c)(ii) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Section 802(b-quater) : | :   |
| (iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the tables mentioned in left column :   | :   |
| 11. <input type="checkbox"/> other (specify): .....   | :   |

Figure of the drawings which should accompany the abstract: **Fig. 11**

Language of filing of the international application: **Japanese**

**Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE**

*Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).*

**Heikichi ODAJIMA (Sealed)**

**Osamu YASUDA (Sealed)**

For receiving Office use only

1. Date of actual receipt of the purported international application:	2. Drawings: <input type="checkbox"/> received:  <input type="checkbox"/> not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority (if two or more are competent): <b>ISA / JP</b>	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid

For International Bureau use only

Date of receipt of the record copy by the International Bureau: